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SCIENTIFIC ASSESSMENTS

CONSIDERATION OF THE SECOND ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

Note by the secretariat

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I. INTRODUCTION

A. Mandate

1. At it first session, in 1995, the Subsidiary Body for Scientific and Technological Advice (SBSTA) expressed strong support for the Intergovernmental Panel on Climate Change (IPCC) as one of the independent and prominent sources of scientific and technical information relevant to the implementation of the Convention, as specified in Article 9 of the Convention (FCCC/SBSTA/1995/3). It noted that the IPCC would adopt its Second Assessment Report at its December 1995 session. It was recognized that this would include important information for the Convention, and would require priority attention at the second session of the SBSTA to enable it to provide relevant advice to the Ad Hoc Group on the Berlin Mandate (AGBM) as necessary (FCCC/AGBM/1995/2, para. 19 (f)). The secretariat was requested to prepare a document for consideration by the SBSTA, identifying issues and suggesting the future inputs that may be needed including those relevant to the AGBM process. The SBSTA also considered further inputs it would need from the IPCC and came to a number of conclusions regarding cooperation with the Panel.

B. Scope of the note

2. The Second Assessment Report was adopted by the IPCC at its eleventh plenary session held in Rome from 11 to 15 December 1995. The Report, to be published under the title "Climate Change 1995: IPCC Second Assessment Report", comprises some 2,000 pages and includes a multitude of figures and tables and more than 10,000 references.

3. The purpose of this note is to provide an overview of the wealth of information contained in the Report with a view to facilitating its use by the SBSTA. It also identifies a number of issues for consideration by the SBSTA (see section V below). The question of future inputs that may be required from the IPCC is addressed in document FCCC/SBSTA/1996/6 on cooperation with the IPCC.

4. This note provides some general information on the Report; its three addenda give more detailed information on the inputs provided by the three IPCC Working Groups. In addition, the Chairman of the IPCC will introduce the Report at the second session of the SBSTA.

II. STRUCTURE OF THE SECOND ASSESSMENT REPORT

5. Each of the three IPCC Working Groups -- Working Group I on Scientific Assessment, Working Group II on Impacts, Adaptation and Mitigation, and Working Group III on Economic and Social Dimensions -- has contributed to the Report. In addition, a Synthesis Report has been drawn up based on the work of all three Groups and relating to

the interpretation of Article 2 of the Convention. Thus the full Report, under the title "Climate Change 1995: IPCC Second Assessment Report", will comprise four volumes, as follows:

Volume 1 **The IPCC Synthesis Report: An Assessment of Scientific - Technical Information Relevant to Interpreting Article 2 of the Framework Convention on Climate Change**

6. This is an independent text, which has been approved by the IPCC after a full government review process. Copies of the complete text, in all languages, will be available to members of the SBSTA. Some information on its contents is given in section IV below.

Volume 2 **The Science of Climate Change: Contribution of Working Group I of the IPCC**

7. This volume comprises a Summary for Policymakers, and a Technical Summary supported by 11 chapters on relevant scientific issues prepared by teams of scientists with expert knowledge in their respective fields. Only the Summary for Policymakers, copies of which will be available to members of the SBSTA in all languages, has been subject to the full government review process. The Technical Summary and the supporting chapters remain the responsibility of the scientists concerned, but have been the subject of worldwide peer review. Information on the contents of this volume is given in document FCCC/SBSTA/1996/7/Add.1.

Volume 3 **Scientific-Technical Analyses of Impacts, Adaptations and Mitigation of Climate Change: Contribution of Working Group II of the IPCC**

8. This volume comprises a Summary for Policymakers, together with a Technical Summary and 28 supporting chapters relating to impacts, adaptation and mitigation of climate change in relation to a wide variety of ecosystems and sectoral and cross-sectoral activities, including the energy sector, again prepared by teams of experts. The Summary for Policymakers, which has been subject to full government review and approval, will be available to members of the SBSTA in all languages. Information on the contents of this volume is provided in document FCCC/SBSTA/1996/7/Add.2.

Volume 4 **Economic and Social Dimensions of Climate Change: Contribution of Working Group III of the IPCC**

9. This volume comprises a Summary for Policymakers and 11 supporting chapters on relevant topics prepared by teams of specialists. The Summary for Policymakers has been approved after full government review and will be available to members of the SBSTA in all languages. Information on the contents of this volume is provided in document FCCC/SBSTA/1996/7/Add.3.

Inventories

10. It should be noted that work on inventories of greenhouse gases and related methodological development is not covered by or included in the Report. It forms part of the current work of the IPCC and will continue in close cooperation with the Convention secretariat, at least until the end of 1997. Some information on this work is given in document FCCC/SBSTA/1996/6.

III. GENERAL OBSERVATIONS

A. Introduction

11. The IPCC Second Assessment Report will serve as an authoritative source of the best available information on the science, impacts, technological options and economics of climate change. Those interested in learning about - and acting upon - climate change will now have access to the best information that the scientific community can offer at this time.

12. In addition to being of general use to the work of the Convention, the IPCC Second Assessment Report is of direct relevance to the current work under the Convention, as demonstrated by the request of the Ad Hoc Group on the Berlin Mandate (AGBM) to the Chairman and other IPCC officers concerned to provide information on quantified emission limitation and reduction objectives and on policies and measures.

13. Among the new findings in the Report, the findings that "climate has changed over the past century" and that "the balance of evidence suggests a discernable human influence on global climate" are of particular interest to the policy process since they state a fact and imply human responsibility for it. The Convention is designed to assist Governments in providing a global response.

B. Availability of the Report

14. The Synthesis and the three Summaries for Policymakers will be available in English during February 1996. Copies in all six languages of the United Nations are expected to be available by late February 1996. The published texts of the supporting chapters are expected to be available, in English only, by May 1996. Unless considerable additional funding can be found by the IPCC, it is unlikely that the supporting chapters will be translated and published in other languages. Delegates of the SBSTA wishing to consult these chapters should obtain copies from their national IPCC focal points.

C. Representativeness of the Report

15. The Second Assessment Report was drawn up by some 2,000 leading scientists and technical experts from about 130 countries. Teams of authors responsible for the preparation of each supporting chapter included scientists from the developing countries. The Report

took two and a half years to prepare and is the most comprehensive evaluation of current scientific, technical, and socio-economic research on climate change since the First Assessment Report in 1990; it is truly global in scope.

D. Review process

16. The Report has been subject to IPCC peer review, involving Governments, scientists and other specialists, and governmental and non-governmental organizations. Diverging scientific and technical views have been reflected. The Technical Summaries of Working Groups I and II as well as the chapters supporting the three Summaries for Policymakers have undergone extensive peer review and, while remaining the responsibility of the respective authors, have been accepted by the IPCC plenary session.

17. The Synthesis Report and the three Summaries for Policymakers have received full governmental review and approval.

E. Use of the Report

18. Although the SBSTA, at its second session, will have before it only the Synthesis Report and the three Summaries for Policymakers, it is clear that decision makers should make maximum use of the entire Second Assessment Report including the Technical Summaries and the supporting chapters. Members of the SBSTA should consult with their colleagues acting as IPCC focal points for access to the texts and appropriate briefing and advice as necessary.

F. Contents of the Report

19. The Second Assessment Report contains a wealth of information which will be a challenge to read, assimilate, and digest in full. The Synthesis Report and the three Summaries for Policymakers provide a broad picture of the scope of the Second Assessment Report. The subsequent three addenda to this document have been prepared in an attempt to make the Report more accessible to delegates. They provide "roadmaps", which should make it easier for delegates to find their way though the wide range of issues covered. The addenda also highlight some of the information in the Report. This is not intended to provide an interpretation of the findings or to serve as a replacement for the IPCC text, but rather to constitute an invitation to consult the Summaries and supporting chapters. Furthermore, it is hoped that these highlights will be translated in the future so as to be of some assistance to delegates who use languages other than English until the Report is made available in translated form.

G. Limitations of the Report

20. Given the manner in which the Second Assessment Report was drawn up it is not surprising that considerable differences in style and presentation are evident throughout. Likewise, the level of detail varies. In some cases certain assumptions, particularly as

concerns scenarios, differ. Even the IPCC definition of climate change, which includes climate variability, differs from that of the Convention (see FCCC/SBSTA/1996/7/Add.1, annex III, which provides a glossary of terms). These and other aspects will have to be taken into account by the SBSTA.

IV. THE SYNTHESIS REPORT

21. The Synthesis Report presents information on the scientific and technical issues related to the interpretation of Article 2 of the Convention, drawing on the underlying IPCC Second Assessment Report. Since the Synthesis is not simply a summary of that Report, the Summaries for Policymakers of the three IPCC Working Groups should also be consulted for a summary of the Second Assessment Report.

22. The ultimate objective of the Convention, as expressed in Article 2, "is to achieve ... stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner."

23. As indicated in the Synthesis Report, the challenges presented to the policymaker by Article 2 are to determine what concentrations of greenhouse gases are to be regarded as "dangerous anthropogenic interference with the climate system" and to chart a future which allows for economic development that is sustainable. The purpose of this Report is to provide scientific, technical, and socio-economic information that can be used, *inter alia*, in addressing these challenges. It is based on the 1994 and 1995 reports of the IPCC Working Groups.

24. The Synthesis Report takes up the various issues addressed in Article 2. It first briefly summarizes the degree of climate change - the "interference with the climate system" - that is projected to occur as a result of human activities. It then goes on to highlight what we know about the vulnerabilities of ecosystems and human communities to likely climate changes, especially in regard to agriculture and food production and other factors such as water availability, health and the impact of sealevel rise, which are important considerations for sustainable development. The task of the IPCC is to provide a sound scientific basis that will enable policymakers to better interpret dangerous anthropogenic interference with the climate system.

25. Given the current trends of increasing emissions of most greenhouse gases, atmospheric concentrations of these gases are likely to increase throughout the next century and beyond. With the growth in such concentrations of greenhouse gases, interference with the climate system will grow in magnitude, and the likelihood of adverse impacts from climate change that could be judged dangerous will become greater. Therefore, possible pathways of future net emissions were considered which might lead to stabilization at

different levels, and the general constraints these imply. This consideration forms the next part of the Report, and is followed by a summary of the technical and policy options for reducing emissions and enhancing sinks of greenhouse gases.

26. The Synthesis Report then addresses issues related to equity and to ensuring that economic development proceeds in a sustainable manner. This involves considering, for instance, estimates of the damage likely to be caused by climate change impacts, and the impacts, including costs and benefits, of adaptation and mitigation. Finally, a number of insights from available studies point to ways of taking initial action even if, at present, it is difficult to decide upon a target for atmospheric concentrations, including time-frames, that would prevent "dangerous anthropogenic interference with the climate system".

27. Decisions with respect to Article 2 of the Convention involve three distinct but interrelated choices: stabilization level, net emissions pathway, and mitigation technologies and policies. The Synthesis Report presents available scientific and technical information on all three choices. It also notes where uncertainties remain regarding such information.

V. POSSIBLE ACTION BY THE SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE

A. General issues

28. The SBSTA may wish to have a general discussion of the findings contained in the Report at its second session with the view to advising the Conference of the Parties (COP) on the policy implications of the findings and on the relevance of the Report to the work under the Convention. It may also consider formulating recommendations, drawing upon the Report, to other subsidiary bodies, in particular to the AGBM and consider the implications for its own work programme.

29. The SBSTA may also consider the contribution that the Report could make to education, training and public awareness (Article 6 of the Convention). In this context it may wish to recommend, *inter alia*, that Parties, organizations and institutions give appropriate attention to the Second Assessment Report and make an effort to disseminate the information contained in it. Specifically, the SBSTA may wish to invite the IPCC, its parent bodies (the World Meteorological Organization and the United Nations Environment Programme) and the Convention secretariat to collaborate in disseminating information from the Second Assessment Report, presenting it in such a manner as to facilitate its absorption by different audiences, including the public information media.

30. In addition the SBSTA may consider what advice would be appropriate under Article 5 of the Convention, given the research and observation needs identified in the Report.

B. Synthesis Report

31. The SBSTA may consider advising the COP on an approach to the challenges presented to the policymaker as identified by the IPCC and referred to in paragraph 23 above.

C. Working Group I Summary for Policymakers

32. The SBSTA may consider the findings of Working Group I, including the crucial new finding that the balance of evidence suggests a discernable human influence on global climate (see FCCC/SBSTA/1996/7/Add.1, annex I paragraph (d)).

D. Working Group II Summary for Policymakers

33. The SBSTA may note that the secretariat has already started to use findings of the Second Assessment Report in its documentation for the AGBM (FCCC/AGBM/1996/2). The SBSTA may further consider the broad range of findings of Working Group II, and in that context address the following issues, including the way in which they should be taken up in its longer-term workplan:

(a) How should the Working Group II report be reflected in any consideration of Article 2?

(b) Whether, pursuant to decision 13/CP.1,* work on adaptation technologies should be undertaken by the secretariat or by the intergovernmental technical advisory panel, once established, and, if so, what level of priority should be accorded to it? (FCCC/SBSTA/1996/2 and FCCC/SBSTA/1996/4)?

(c) How should information on mitigation options be reflected in the AGBM process?

(d) Would the new information on mitigation and adaptation options need to be reflected in the guidance which is given by the COP to the Global Environment Facility and which will be further developed (see decisions 11/CP.1 and 12/CP.1)? If so, the SBSTA would need to advise the Subsidiary Body for Implementation (SBI) accordingly.

(e) Whether the new information on mitigation methods should be reflected in guidelines for national communications, and, if so, how?

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* For decisions adopted by the Conference of the Parties at its first session, held at Berlin from 28 March to 7 April 1995, see document FCCC/CP/1995/7/Add.1.

E. Working Group III Summary for Policymakers

34. The SBSTA may consider the findings of Working Group III, noting that the IPCC can clarify scientifically the implications of different approaches and proposals, but that the choice of particular proposals is a policy judgement.

35. The SBSTA may draw certain findings to the attention of the SBI and/or the AGBM, including the insights and possible actions listed under "Scope of assessment".